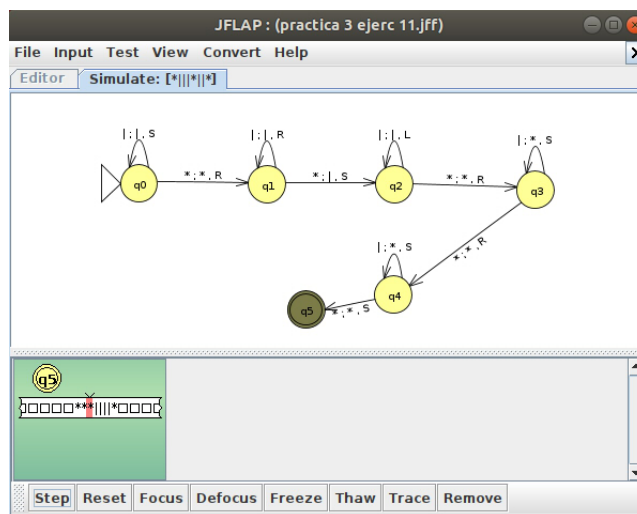
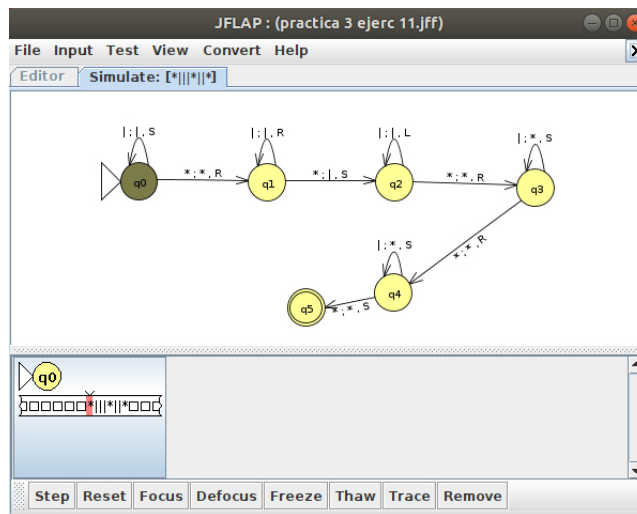


Practica 3, Ejercicio 1

Minerva Anastasia Gomez Galleguillos

23 de diciembre de 2022

1. Ejercicio 1.



2. Ejercicio 2.

addition2

$addition(\pi_1^3, addition(\pi_2^3, \pi_3^3))$

The image shows a MATLAB Command Window and Workspace. The Command Window displays the execution of a recursive function `evalrecfunction` with arguments 'addition2', 1, 2, 8. The output shows the function calling itself with decreasing values of the third argument, eventually returning 1. The Workspace shows the variable `ans` as a double scalar with a value of 1.

```
>> evalrecfunction('addition2', 1, 2, 8)
addition2(1,2,8)
addition( $\pi^3_1$ , addition( $\pi^3_2, \pi^3_3$ ))(1,2,8)
 $\pi^3_1(1,2,8) = 1$ 

addition( $\pi^3_2, \pi^3_3$ )(1,2,8)
 $\pi^3_2(1,2,8) = 2$ 

 $\pi^3_3(1,2,8) = 8$ 

addition(2,8)
 $\langle \pi^3_1 | \sigma(\pi^3_3) \rangle(2,8)$ 
 $\langle \pi^3_1 | \sigma(\pi^3_3) \rangle(2,7)$ 
 $\langle \pi^3_1 | \sigma(\pi^3_3) \rangle(2,6)$ 
 $\langle \pi^3_1 | \sigma(\pi^3_3) \rangle(2,5)$ 
 $\langle \pi^3_1 | \sigma(\pi^3_3) \rangle(2,4)$ 
 $\langle \pi^3_1 | \sigma(\pi^3_3) \rangle(2,3)$ 
 $\langle \pi^3_1 | \sigma(\pi^3_3) \rangle(2,2)$ 
 $\langle \pi^3_1 | \sigma(\pi^3_3) \rangle(2,1)$ 
 $\langle \pi^3_1 | \sigma(\pi^3_3) \rangle(2,0)$ 
 $\pi^3_1(2) = 2$ 
 $\sigma(\pi^3_3)(2,0,2)$ 
 $\pi^3_3(2,0,2) = 2$ 

 $\sigma(2) = 3$ 
 $\sigma(\pi^3_3)(2,1,3)$ 
 $\pi^3_3(2,1,3) = 3$ 
```

The image shows a MATLAB Command Window and Workspace. The Command Window displays the execution of a recursive function `evalrecfunction` with arguments 'addition2', 3, 2, 2. The output shows the function calling itself with decreasing values of the third argument, eventually returning 3. The Workspace shows the variable `ans` as a double scalar with a value of 3.

```
 $\sigma(3) = 4$ 
 $\sigma(\pi^3_3)(2,2,4)$ 
 $\pi^3_3(2,2,4) = 4$ 

 $\sigma(4) = 5$ 
 $\sigma(\pi^3_3)(2,3,5)$ 
 $\pi^3_3(2,3,5) = 5$ 

 $\sigma(5) = 6$ 
 $\sigma(\pi^3_3)(2,4,6)$ 
 $\pi^3_3(2,4,6) = 6$ 

 $\sigma(6) = 7$ 
 $\sigma(\pi^3_3)(2,5,7)$ 
 $\pi^3_3(2,5,7) = 7$ 

 $\sigma(7) = 8$ 
 $\sigma(\pi^3_3)(2,6,8)$ 
 $\pi^3_3(2,6,8) = 8$ 

 $\sigma(8) = 9$ 
 $\sigma(\pi^3_3)(2,7,9)$ 
 $\pi^3_3(2,7,9) = 9$ 

 $\sigma(9) = 10$ 
addition(1,10)
```

are/recursivefunctions

Nombre

evalrecfunction.m
recursiveexpression.m
recursivefunctions

Espacio de trabajo

Filtrar

Nombre	Clase	Dimen:
ans	double	1x1

Historial de comandos

Filtrar

evalrecfunction('addition2', 3, 2, 2)
evalrecfunction('addition2', 3, 2, 2)
evalrecfunction('addition2', 3, 2, 2)
evalrecfunction('addition2', 3, 2, 2)
evalrecfunction('addition2', 1, 2, 8)

```

<pi^1 | sigma(pi^3)>(1,10)
<pi^1 | sigma(pi^3)>(1,9)
<pi^1 | sigma(pi^3)>(1,8)
<pi^1 | sigma(pi^3)>(1,7)
<pi^1 | sigma(pi^3)>(1,6)
<pi^1 | sigma(pi^3)>(1,5)
<pi^1 | sigma(pi^3)>(1,4)
<pi^1 | sigma(pi^3)>(1,3)
<pi^1 | sigma(pi^3)>(1,2)
<pi^1 | sigma(pi^3)>(1,1)
<pi^1 | sigma(pi^3)>(1,0)
pi^1(1) = 1
sigma(pi^3)(1,0,1)
pi^3(1,0,1) = 1

sigma(1) = 2
sigma(pi^3)(1,1,2)
pi^3(1,1,2) = 2

sigma(2) = 3
sigma(pi^3)(1,2,3)
pi^3(1,2,3) = 3

sigma(3) = 4
sigma(pi^3)(1,3,4)
pi^3(1,3,4) = 4

```

are/recursivefunctions

Nombre

evalrecfunction.m
recursiveexpression.m
recursivefunctions

Espacio de trabajo

Filtrar

Nombre	Clase	Dimen:
ans	double	1x1

Historial de comandos

Filtrar

evalrecfunction('addition2', 3, 2, 2)
evalrecfunction('addition2', 3, 2, 2)
evalrecfunction('addition2', 3, 2, 2)
evalrecfunction('addition2', 3, 2, 2)
evalrecfunction('addition2', 1, 2, 8)

```

sigma(4) = 5
sigma(pi^3)(1,4,5)
pi^3(1,4,5) = 5

sigma(5) = 6
sigma(pi^3)(1,5,6)
pi^3(1,5,6) = 6

sigma(6) = 7
sigma(pi^3)(1,6,7)
pi^3(1,6,7) = 7

sigma(7) = 8
sigma(pi^3)(1,7,8)
pi^3(1,7,8) = 8

sigma(8) = 9
sigma(pi^3)(1,8,9)
pi^3(1,8,9) = 9

sigma(9) = 10
sigma(pi^3)(1,9,10)
pi^3(1,9,10) = 10

sigma(10) = 11
ans = 11
>>

```

3. Ejercicio 3.

```
Q : (3, 3, s);  
s :  
while X2 ≠ 0 do  
    X2 := X2 - 1;  
    X1 := X1 + 1;  
od  
while X3 ≠ 0 do  
    X3 := X3 - 1;  
    X1 := X1 + 1;  
od
```